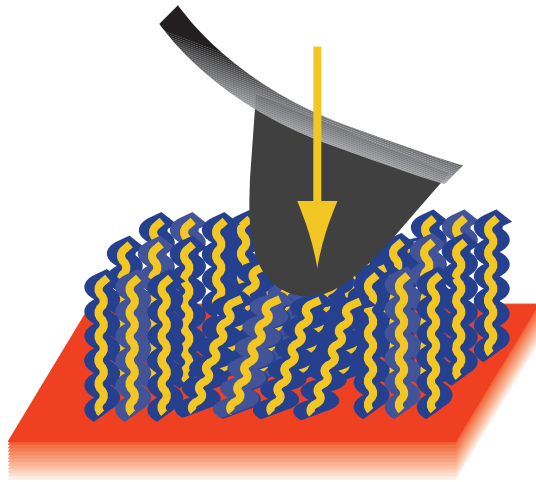




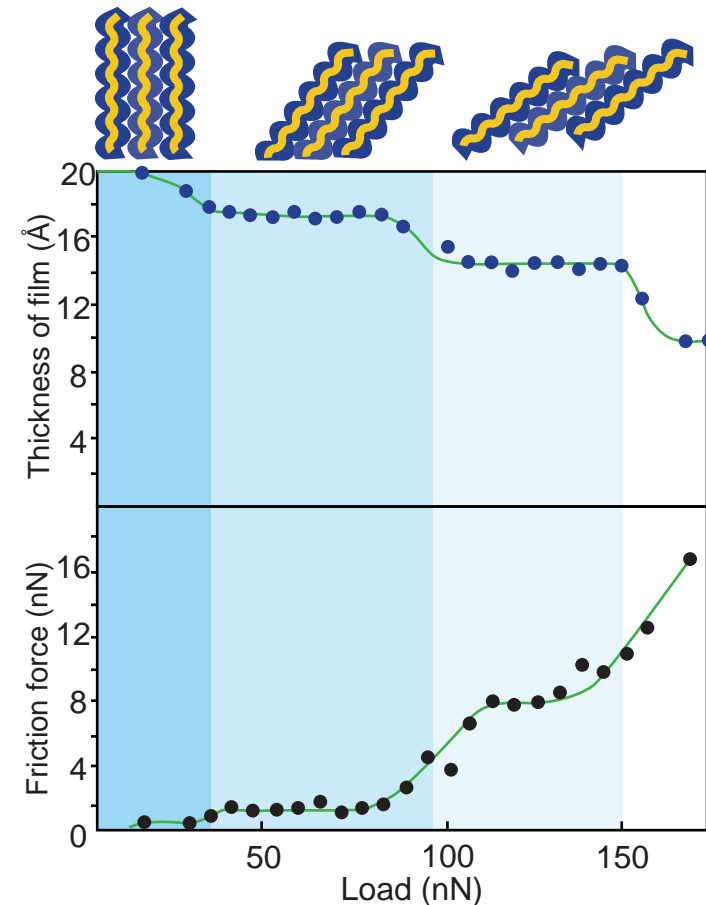
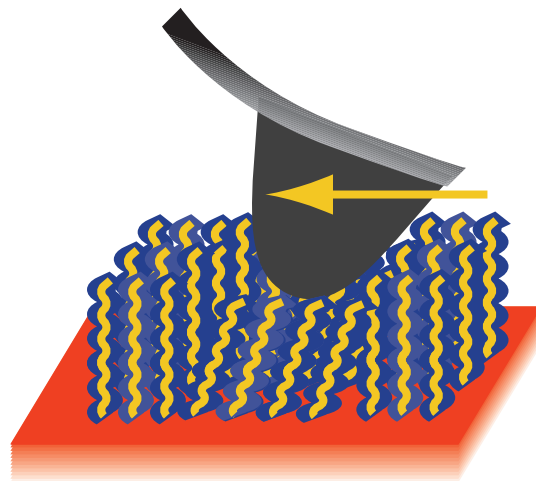
# Getting to the Root of Friction

## *"Nano-Tribology" Study Reveals Molecular Origin of Friction*



### Atomic Force Microscope for nanofriction studies.

AFM tip is pushed (yellow arrow) into alkylsilane molecules on mica substrate. Frictional force is then measured as the tip is dragged horizontally through the alkylsilane film.



**Compressed thickness of film (top graph) and lateral frictional force (lower graph).** Both show discrete steps, highlighted by the contrasting colors, as a function of the downward force of the AFM tip. This was shown to be due to the ratcheting of the nested alkyl chains.